IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Michael A. Dean

Confirmation No.: 5673

Application No.: 10/803,551

Art Unit: 2168

Filed: March 18, 2004

Examiner: OMOSEWO, OLUBUSOLA

For: METHODS AND APPARATUS FOR FOCUSING SEARCH RESULTS ON THE SEMANTIC WEB

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is a Reply Brief under Rule 41.41 (37 C.F.R) in response to the Examiner's Answer of December 31, 2007 (the "Examiner's Answer" or the "Answer"). In Section 10, the Answer contains a response to some of the arguments made in Appellant's brief. Appellant now responds to the Examiner's Answer as follows.

All arguments presented within the Appeal Brief of September 14, 2007, are incorporated herein by reference. Additional arguments are provided below.

In response to the points asserted in the Examiner's Answer, Appellant counters that:

First, Wical fails to disclose "Semantic Web structured resources" and fails to process the disclosed documents in a method consistent with "Semantic Web structured resources." This is evident because Wical produces a single theme vector for each document, and does not maintain information relating theme information to specific portions of the documents.

Second, Wical fails to disclose "component words" or processing component words as recited in the claims. Where the relevant claims disclose "parsing statements ... to identify

component words," and "constructing an index from said component words, said index relating said component words to said statements," Wical fails to disclose any object which is both parsed from specific statements and indexed relative to those statements. Particularly, Wical fails to maintain any association between any indexed object and the statements it originated from.

Third, Wical fails to disclose "predicates, instances, types of said instances, and literal values" as recited in the claims. Instead, the Examiner's Answer rejects the four distinct elements over two elements found in Wical, thereby ignoring the distinctions between each of the "predicates, instances, types of said instances, and literal values" recited in the claims. Furthermore, nowhere does Wical summarize the contents of these four distinct elements.

Finally, Wical fails to disclose gathering statements from said identified Semantic Web structured resources ... [and] ... presenting said gathered statements for parsing." Whereas the relevant claims recite gathering various statements from Semantic Web resources and parsing the statements, Wical processes documents completely. Statements in each document are not gathered and then parsed as individual statements, but are instead processed as part of a document. This is evident by the fact that, in Wical, the final product from the document parsing is a single theme vector, associated with the document as a whole, and not based on the individual statements.

The particulars of each of the above positions, refuting the Examiner's Answer, are addressed below in turn:

A. Independent claims 1, 5, 8, and 12 (Ground of Rejection No. 1)

1. "Semantic Web structured resources"

Independent claims 1, 5, 8, and 12 all recite one or more "Semantic Web structured resources." Wical, in contrast, contains no teaching or suggestion that his documents must be "structured resources," much less "Semantic Web structured resource[s]." In fact, Wical teaches against "structured resources" as recited in Appellants' claims.

The Examiner's Answer responds by stating that:

> *Wical's teachings at Col. 2, lines 23-40 indicate the use of the internet or World Wide Web to locate information. Wical's invention includes the use of a search and retrieval system which will involve using the web[.] Wical's search and retrieval system includes documents labeled document 130, i.e. the document may be articles, books, periodical etc. The document is a complication [sic] of information from any source, equivalent to appellant's resources (collection of page in the specification) and the documents may be accessed via a network, (Col. 5, lines 28-41)*

(Examiner's Answer, page 8)

However, this response fails to address the argument set forth in the Appeal Brief that Wical does not disclose any "Semantic Web structured resources." In contrast to the unstructured resource disclosed in Wical, information in a Semantic Web resource is maintained in a structure for interpretation by computers. The Resource Description Framework (RDF) sets forth the structural minimum requirements for Semantic Web resources.

The Resource Description Framework (RDF) is a framework for describing internet resources, such as Web sites and their content. RDF includes statements – comprising subject, predicate, object combinations – describing instances of specific classes – such as data objects. With respect to search and data aggregation, Semantic web resources provide an alternative to simply collecting and indexing entire unstructured resources by providing the

content in a structure that separates the portions of the resource in isolated statements, which can be individually processed.

The argument set forth in the Examiner's Answer implies that because Wical discloses using networks for purposes of document data retrieval, then Wical, *inter alia,* discloses "Semantic Web structured resources." However, this position is unsupported by Wical because Wical fails to disclose such resources and fails to process the disclosed documents in a method consistent with the structures of "Semantic Web structured resources." This is evident by the fact that Wical fails to process the documents as separate statements and that Wical creates a theme vector for each document as a whole, and not for the separate statements within the documents.

Wical teaches accepting data from various documents regardless of the documents' structure. The documents processed by Wical are clearly not processed as "structured resources" at all, but are processed irrespective of a document's structure, or whether a document has any structure. Wical extracts theme information irrespective of the presence, or lack, of any structure.

2-3. "component words" and "an index relating component words to statements."

Independent claim 1 recites "parsing statements from at least one Semantic Web structured resource to identify component words," and "constructing an index from said component words, said index relating said component words to said statements."

Independent claim 5 recites "gathering statements from said Semantic Web structured resources; parsing of said statements to identify component words," and "constructing an index from said component words, said index relating said component words to said statements."

Independent claim 8 recites "at least one parser receiving statements from Semantic Web structured resources and identifying component words of said statements," and "a processor for constructing an index relating said component words to said statements."

Independent claim 12 recites "instructions for causing a processor to: parse statements from at least one Semantic Web structured resource to identify component words," and "construct an index from said component words, said index relating said component words to said statements."

Wical does not include any teaching or suggestion of "component words," much less of parsing statements to identify component words. Furthermore, Wical does not teach or suggest an index relating component words to statements, thus providing further grounds for reversing the Examiner's rejection of Appellants' claims.

The Examiner's Answer responds by stating that:

> *[A]t Col. 27, lines 31-34 Wical teaches the linguistic engine extracting topics and **content carry words** through the use of the thematic tags, for each **sentence** in the **documents**, which reads on appellants claim of (parsing statements to identify component words).Col. 27, lines 59-67 also discloses parsing to identify the content (words) of the document. Col. 28, lines 1-58 further teaches Wical's parsing to identify content of documents.*

(Examiner's Answer, page 9)

> *[A]t Col. 6, lines 64-Col. 8, lines 11 Wical's teachings includes a document theme vector 160 that includes a list of themes(i.e. restaurant) for a document to define the content (component words) of that document. However, Wical's teachings includes a restaurant review column may consist of words that are associated with a restaurant, such as food quality, Meal presentation or service (component words). Thus teachings are synonymous to appellant's claim of an index relating component words to statements.*

(Examiner's Answer, pages 9-10)

The Examiner's Answer cites to the "content carrying words 737" as the basis for anticipating the claimed "component words."[1] However, the Examiner's Answer confuses the

[1] "Component words" as claimed, are extracted from statements in Semantic Web structures, and are indexed to maintain the association between a given "component word" and the "statement" from which it was parsed.

various terms in Wical. Wical refers to "theme vectors," "tags" (conceptual tags, thematic tags and stylistic tags), and "content carrying words."[2] [3] [4]

First, Wical's "content carrying words" cannot form the basis for anticipating the claimed "component words" because the "content carrying words" are never indexed. "Content carrying words" are parsed from their originating document one sentence at a time; however, parsing does not create an indexed relationship between "content carrying words" and corresponding sentences. The "content carrying words" cited in the Examiner's Answer, are simply a temporary step in creating the theme vectors, which associate thematic, contextual, and stylistic tag information with a given document (Wical at col. 18, lines 35-40).

Furthermore, Wical's "theme vectors" also do not anticipate the claimed "component words" because each indexed "theme vector" is associated with a single document, and each document is associated with a single "theme vector." That is, there is a one-to-one relationship maintained between "theme vectors" and documents. Wical does not disclose an indexed relationship between "theme vectors" and sentences. In contrast, in each of the independent claims set forth above, "component words" are identified in "statements" parsed from "structured resources," i.e., a *single* structured resource may contain *multiple* statements, and a *single* statement may contain *multiple* component words. The claims recite a *first* one-to-many relationship between a structured resource and its associated statements, and a *second* one-to-many relationship between a single statement and its associated component words. As such, the one-to-one relationship between theme vectors and documents is completely different than the relationships between component words, statements, and structured resources.

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[2] "Content carrying words" are extracted by the linguistic engine 700 from the document (Wical at col. 27, lines 59-67).

[3] "Tags" are produced by the knowledge processor 740 using the content carrying words (Wical at col. 28, lines 16-35).

[4] A single "theme vector" for a given document is produced from the "tags" derived from the "content carrying words" extracted from the given document (Wical at col. 28, lines 35-37). See also Appeal Brief on page 18-19.

B. Independent Claim 1, 8, and 12 and dependent claim 6 (Ground of Rejection No. 1)

"obtaining predicates, instances, types of said instances, and literal values"

Independent claim 1 also recites "obtaining predicates, instances, types of said instances, and literal values of said related ones of said statements; and summarizing said predicates, instances, types, and literal values for presentation to a user as said search results."

Dependent claim 6 recites "obtaining predicates, instances, types of said instances, and literal values of said statements related to search terms of said query by said index."

Independent claim 8 recites "a servlet for obtaining predicates, instances, types of said instances, and literal values of said statements related to said matched words."

Independent claim 12 recites "obtain predicates, instances, types of said instances, and literal values of said related ones of said statements."

Wical fails to teach obtaining predicates, instances, types of instances, and literal values of related ones in statements, providing further grounds for reversing the rejections of Appellants' claims.

The Examiner's Answer responds by stating that:

> *[A]t Col. 4, lines 45-62 Wical's teachings includes a search using a query term Stock, the search and retrieval system responses may include a first list of* ***documents*** *(list of documents implies that more than one document is retrieved, which also reads on appellant's instances) under the category "financial securities" which is synonymous to appellants predicates. The search and retrieval system responses may also include a second list of* ***documents*** *(list of documents implies that more than one document is retrieved, which also reads on appellant's instances) under the category animals which is synonymous to appellants predicates. The search and retrieval system responses may also include a third list of* ***documents*** *(list of documents implies that more than one document is retrieved, which also reads on appellant's instances) under the category race automobiles which is synonymous to appellants predicates. However, based on Wical's teachings; the list of documents represents*

> *appellant's instance likewise the financial security is synonymous to the* ***type*** *of instance. Furthermore, the result of the search "stock" could be divided into 3 categories; Category 1-3 which are the financial security, animal and race automobile, which is synonymous to appellant's literal value.*

(Examiner's Answer, pages 10-11; underline emphasis of "predicates" added)

The Examiner's Answer fails to refute Appellants position for the three reasons already set forth in the Appeal Brief.

First, the Examiner's Answer has not identified all of the recitations of claim 1 within the Wical reference, but has instead improperly asserted that the same theme elements disclosed in Wical read on multiple recitations in the claims. This is particularly obvious in the response because the Examiner's Answer reads *predicates* and *instances* from the independent claims on the same elements in Wical. One value cannot serve to anticipate two or more distinct types of values. The Examiner only identified elements comparable to types and predicates, and has failed to address the recitation in Appellants' claims of the distinct "*instances ... and literal*" values.

As set forth in the specification, a predicate relates to a named property used in a statement, the instance relates to the subject of a statement, types refer to the type of instances, and values refer to objects of a statement.[5] As such, while predicates, instances, types, and literal values are related, they do not represent the same types of data and cannot be represented by the same element or object.

Second, the Examiner's Answer failed to address the difference between the "predicates, instances, types of said instances, and literal values of said related ones of said statements."

Third, Examiner failed to recognize that Wical does not maintain an association between any data type and a statement within the searched documents. While Wical creates

[5] Specification, Page 8, lines 10-13.

various data structures associated with the original documents in the process of creating the knowledge base, Wical never creates data objects of any type that are associated with any particular statements.

The Examiner's Answer further responds by stating that:

> *Appellant argued that Wical does not teach summarizing statements extracted from web resources. However, appellant is arguing limitation that was not claimed.*

(Examiner's Answer, page 11)

By example, claim 1 recites "obtaining predicates, instances, types of said instances, and literal values *of said related ones of said statements*; and summarizing said predicates, instances, types, and literal values for presentation to a user as said search results." Claim 1 also recites "parsing *statements from at least one Semantic Web structured resource*." Given, that statements originate from "at least one Semantic Web structured resource," and "predicates, instances, types of said instances, and literal values" relate to the parsed statements, transitional logic would imply that by summarizing information pertaining to statements claim 1 also implies that this process summarizes information pertaining to statements Semantic Web structured resources.

C. Independent Claim 5 and Dependent Claims 3, 10, and 14 (Ground of Rejection No. 1)

Claim 3 depends on claim 1 and recites "gathering statements from said identified Semantic Web structured resources ... [and] ... presenting said gathered statements for parsing."

Independent claim 5 recites "gathering statements from said Semantic Web structured resources."

Claim 10 depends on claim 8, and recites "means for gathering statements from said identified Semantic Web structured resources to obtain gathered statements ... [and] ... means for presenting said gathered statements for parsing of said gathered statements."

Claim 14 depends on claim 12, and recites "gather statements from said identified Semantic Web structured resources to obtain gathered statements...[and]... present said gathered statements for parsing of said gathered statements."

The foregoing claims distinguish between statements and resources by reciting that the parser is presented with the gathered statements, not the resources. Wical, in contrast, does not parse and index *the individual statements* in documents 130. Furthermore, Wical does not teach "gathering statements from said identified Semantic Web structured resources," particularly because Wical does not disclose "identifying" Semantic Web structured resources.

The Examiner's Answer responds by stating that:

> *[A]t Col. 2, lines 43-67 are synonymous to appellant's teachings. Wical's teachings at Col. 2, lines 23-40 indicate the use of the internet or World Wide Web to locate information. Wical's invention includes the use of a search and retrieval system which will involve using the web. In Col. 2, lines 61-67, Wical teaches, content processing system of the search and retrieval system, processes a plurality of documents to identify themes for a document, and classifies the documents, including themes identified for the documents, in categories of the knowledge base, which is synonymous to appellant's teachings of gather statements from said identified semantic web structure resources to obtain gathered statement. Wical also teaches at Col. 27, lines 31-34, the linguistic engine extracting topics and content carry words through the use of the thematic tags, for each sentence in the documents, which indicates that sentences are been parsed however, it reads on appellants claim of (parsing statements).*

(Examiner's Answer, pages 12-13)

The Examiner's Answer fails to address the process disclosed in the claims. The above claims distinguish between statements and resources by reciting that the parser is presented with the *gathered statements*, not the resources. The claims do not recite parsing structured resources directly, but instead gathering the statements prior to parsing. As such, the claim distinguishes the individual statements from their originating resources. Wical does not parse and index *the individual statements* in documents 130. Instead, Wical discloses processing

each document 130 in its entirety, and assigning each document 130 a single theme vector 160. Therefore, in Wical, each document is parsed and processed as a whole, not as a gathering of statements.

D. Dependent Claims 2, 4, 7, 9, 11, 13, and 15 (Ground of Rejection No. 1)

Claim 2 depends on claim 1 and recites "arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 4 depends on claim 3 and recites "arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 7 depends on claim 6 and recites "arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 9 depends on claim 8 and recites "means for arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 11 depends on claim 10 and recites "means for arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 13 depends on claim 12 and recites "arrange said predicates, instances, types, and literal values into one or more graphical representations." Claim 15 recites "arrange said predicates, instances, types, and literal values into one or more graphical representations."

Wical fails to teach or suggest "arranging said predicates, instances, types, and literal values into one or more graphical representations," because the illustrated search results fail to illustrate the "predicates, instances, types, and literal values" in a single graphical representation. The Examiner's Answer asserts that Wical anticipates these claims using the same position as that set forth above when addressing the subject matter of "obtaining predicates, instances, types of said instances, and literal values," which is also refuted for the reasons set forth above.

For at least these additional reasons, Appellant's claimed subject matter is outside the scope and content of the cited prior art. Therefore, the rejection of Appellant's claims should not be sustained.

In view of the foregoing, it is submitted that the final rejection of the pending claims is improper and should not be sustained. Therefore, a reversal of the final Office Action of July 13, 2005 is respectfully requested.

Dated: February 26, 2008

Respectfully submitted,

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